

Application No. 10/081,478
Amdt. Dated October 12, 2004
Reply to Office Action of April 27, 2004

Amendment to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of claims:

1. (Currently amended) An article for use in healing of wounds and repair of bone tissue defects, the article comprising:

[[(a)]]] a flexible membrane having an upper surface and a lower surface, each surface defining a substrate formed of a biologically-acceptable biodegradable material adapted to be resorbed in use, each substrate having thereon means capable of orienting cell growth comprising a microgeometry formed in said substrates, [[a]] said microgeometry of said upper surface proportioned to a cell morphology of soft tissue cells, having a first pattern of grooves and ridges, said grooves and ridges upon said upper surface having a width and a height of about 2 to about 10 microns; and [[a]] said microgeometry of said lower surface proportioned to a cell morphology of bone tissue cells, having a second pattern of grooves and ridges, said grooves and ridges upon said lower surface having a width and a height of about 8 to about 25 microns.

2. Canceled.

3. (Currently amended) The article as recited in Claim [[2]]1, in which said ridges comprise posts.

4. (Currently amended) The article as recited in Claim 1, in which said membrane defines a width thickness of between about 200 and about 500 microns.

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5. Canceled

6. (Currently amended) The article as recited in Claim [[5]]1 in which said biodegradable material is selected from a member of the group consisting of [[as]] polylactic acid homopolymers, polyglycolic acid co-polymers, combinations thereof, polylactones, polypeptides, polyvinyl alcohols, and natural polymers such as collagen, and polysaccharides, collagen, Hench's bioglass, fibrinogen and polyimino-carbonate.

7. (Currently amended) The article as recited in Claim 1, in which a weight of said resorbed biodegradable material is in a range of one to five grams/cm².

8. (Currently amended) The article as recited in Claim [[3]]1, in which said lower surface includes osteoconductive chemical properties.

9-10 Canceled.

11. (New) An article for use in repairing bone tissue defects comprising a flexible membrane having a soft tissue side and a hard tissue side, each side defining a substrate formed of a biologically-acceptable biodegradable material adapted to be resorbed in use, each substrate comprising a microgeometry of grooves and ridges formed in said substrates, said grooves and ridges of said soft tissue side having a width and a height of about 2 to about 10 microns, proportioned to a cell morphology of soft tissue cells; and said grooves and ridges of said hard tissue side having a width and a height of about 8 to about 25 microns, proportioned to a cell morphology of bone tissue cells for promoting bone tissue growth.

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12. (New) The article as recited in Claim 11, in which said membrane defines a thickness of between about 200 and about 500 microns.

13. (New) The article as recited in Claim 12 in which said biodegradable material is selected from a member of the group consisting of polylactic acid homopolymers, polyglycolic acid co-polymers, combinations thereof, polylactones, polypeptides, polyvinyl alcohols, and natural polymers such as collagen, and polysaccharides, collagen, Hench's bioglass, fibrinogen and polyimino-carbonate.

14. (New) The article as recited in Claim 13, in which a weight of said biodegradable material is in a range of one to five grams/cm².

15. (New) The article as recited in Claim 11, in which said hard tissue side includes osteoconductive chemical properties.

16. (New) The article as recited in Claim 11, in which said ridges comprise posts.

17. (New) A method of repairing a bone defect comprising the steps of:

(a) providing an article comprising a flexible membrane having a soft tissue side and a hard tissue side, each side defining a substrate formed of a biologically-acceptable biodegradable material adapted to be resorbed in use, each substrate comprising a microgeometry of grooves and ridges formed in said substrates, said grooves and ridges of said soft tissue side having a width and a height of about 2 to about 10 microns, proportioned to a cell morphology of soft tissue cells; and said grooves and ridges of said hard tissue side having a width and a height of about 8 to about 25 microns, proportioned to a cell morphology of bone tissue cells; and

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(b) surgically applying said article on top of a bone defect to be repaired, with said hard tissue side toward bone tissue and said soft tissue side toward soft issue;

wherein said grooves and ridges of said hard tissue side promote bone tissue growth.

18. The method of Claim 17, wherein said method further comprises placing a bone graft material into said bone defect prior to said applying said article.

19. The method of Claim 17, wherein said article prevents said soft tissue growing into said bone defect during bone repairing.

20. The method of Claim 17, wherein said flexible membrane has a thickness of between about 200 and about 500 microns, and said flexible membrane biodegrades in said tissues within a period of three to nine weeks.